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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,807	10/12/2005	Bastian Albers	P17214-US1	9912
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ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			EXAMINER RICK, JASON D	
			ART UNIT	PAPER NUMBER
			2442	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/526,807

Applicant(s)

ALBERS ET AL.

Examiner

JASON RECEK

Art Unit

2442

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 23-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This is in response to the amendment filed on November 14th 2008.

Status of Claims

Claims 1-12 and 23-25 are pending.

Claims 1-12 are rejected under 35 U.S.C. 103(a)

Claims 1, 3-10 and 23 are rejected under 35 U.S.C. 101.

Claims 23-25 are objected to.

Response to Arguments

1. Applicant's arguments with respect to claim 1 have been fully considered but they are not persuasive. Applicant argues that Radha, Balachandran and Zhu do not disclose certain limitations, specifically that Radha does not teach a delay budget as agreed by the examiner (pg. 8). This is not persuasive because applicant is misunderstanding the examiner's statement in the last office action. Radha clearly disclose a delay budget, a quick look at the title of Radha "System and Method for Controlling the **Delay Budget** ..." is all that is needed. The portion of the examiner's statement to which applicant is referring was attempting to communicate that Radha didn't disclose the new definition of delay budget as recited by the amendment.

Applicant seems to argue that Radha does not address a "limited transmission capacity" (pg. 8). This argument is not persuasive because Radha specifically mentions that there is limited bandwidth available (col. 2 ln. 28-35).

Applicant argues that Balachandran does not disclose "budget delay either as an equation or in the parameters used to calculate the budget delay" (pg. 9). This argument has no relevance to claim 1 since there is no calculation using parameters or equation recited by claim 1. This argument is persuasive with regard to claims 23-25.

Applicant generally alleges that Zhu does not disclose these limitations. This argument is irrelevant because Zhu is not relied upon for teaching a delay budget. As explained below the combination of the references teaches all the limitations, including the new amendments.

Applicant's arguments regarding claim 9 have been fully considered but they are not persuasive. The examiner appreciates applicant's position that four references are a little much to teach obviousness however there is no limitation on the number of references that can be used in a 103 rejection. Therefore this argument is not persuasive as a matter of law.

Allowable Subject Matter

1. Claims 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. The following is a statement of reasons for the indication of allowable subject matter: the equation for computing the budget delay that is recited in these claims is believed to be novel and not obvious in view of the prior art. The Balachandran reference teaches calculating a play out time but does not specifically teach this equation. Similarly the Radha reference teaches using a delay budget to control retransmission but does not teach this equation.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 3-10 and 23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 1, it is a method which is eligible for patent protection. However, to be statutory a "process" must be tied to a particular machine, or transform underlying subject matter to a different state or thing. The claim neither recites a

particular machine or apparatus, nor transforms any article into a different state or thing. Thus, it is not drawn to patent-eligible subject matter.

Regarding claim 2, the limitation "buffer" indicates a particular machine and thus this claim contains patentable subject matter.

Regarding claims 3-10 and 23, they do not add any limitations that would render the subject matter patentable. Therefore they are also rejected since they depending from a rejected claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Radha et al U.S. Pat. No. 6,700,893 B1 in view of Zhu et al. U.S. 6,085,252 and Balachandran et al. US 7,068,619 B2.

Regarding claim 1, Radha discloses transmission of "a plurality of data packets from a sender to a receiver, wherein the data transmission is performed over a link with limited transmission capacity" as streaming data over a network (Fig. 1), "a presentation time is defined for a first data packet of said plurality" as a time that a data packet must

be delivered in order to be useful (col. 1 ln. 50-52), "the receiver performs a first check whether data packets are correctly received and at least one data packet is selected for retransmission" as the receiver detecting missing packets and requesting retransmission (col. 3 ln. 22-26), "determining a delay budget from the presentation time of the first data packet" (col. 2 ln. 58-60), "determining a delay requirement for the retransmission of the selected data packet" as calculating how long it will take to retransmit the lost data packet (col. 12 ln. 53-55), "comparing the delay requirement and the delay budget" as comparing the budget with the transmission requirement (col. 15 ln. 41-50).

Radha does not specifically disclose "selectively retransmitting the first data packet" however this is taught by Zhu as a QoS manager determines whether or not to request a retransmission based at least on a bandwidth budget (col. 5 ln. 10-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Radha by selectively retransmitting as taught by Zhu for the purpose of conserving bandwidth. Zhu suggests this by disclosing that too much data will slow down the network (col. 6 ln. 8-11).

Radha and Zhu do not explicitly disclose "the delay budget indicating the amount of time by which the first data packet can be delayed without resulting in a buffer underflow" however this is taught by Balachandran as determining a delay rate (budget) and aborting recovery if the data would not be received in time (buffer underflow). See Balachandran (col. 2 ln. 35-46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Radha and Zhu with the teachings of Balachandran for the purpose of maximizing bandwidth. Balachandran teaches that by using a delay rate (delay budget) streaming data performance is improved (col. 2 ln. 27-46).

Radha, Zhu and Balachandran do not explicitly teach selectively retransmitting the first data packet "if the delay budget is at least equal to the delay requirement, otherwise cancelling the retransmission" however the concept of selective retransmission is disclosed by Zhu as discussed above and the concept of cancelling a retransmission is taught by Balachandran as discussed above (aborting recovery). It would have been obvious to one of ordinary skill in the art at the time of the invention to cancel a retransmission request if the delay budget is less than the delay requirement. Balachandran suggests doing so when the next data block will not be received in time (col. 2 ln. 42-44).

Regarding claim 2, Radha discloses "the receiver stores data packets in a buffer with a buffer fill level and wherein the delay budget is a function of the buffer fill level" as a buffer for receiving packets and a delay budget controller that monitors the fill level or underflow status of the buffer (col. 5 ln. 64-67, Fig. 1).

Regarding claim 3, Radha discloses "the delay budget is determined from the presentation times for each of a group comprising at least two first data packets" as

providing a delay budget controller capable of operating on streams of data packets (col. 3 ln. 9-14) thus a delay budget for a group of at least two packets exists.

Regarding claim 4, Radha discloses “the first data packets of the group are to be transmitted in a predefined sequence, and wherein additional data packets are to be added to the group, which are the next data packets for transmission in the predefined sequence” as the invention relates to a stream of data (col. 3 ln. 9-14) the packets have a predefined sequence, and “the adding of additional data packets to the group is stopped if the delay budget is expected to remain constant for further additional packets” as constraints that the delay budget must adhere to, one of which is that the budget is determined by packet retransmission time and thus only a finite number of packets may be selected (col. 12 ln. 60- col. 13 ln. 3).

Regarding claim 5, Radha discloses “the receiver requests retransmission of the at least one data packet in a status message” as the receiver requesting retransmission of selected packets by sending a status message that the packets were not received (col. 16 ln. 18-20, Fig. 6).

Regarding claim 6, Radha discloses “the delay budget is reduced by the delay requirement if a retransmission is performed” as a delay budget that consists of delay requirement thus when retransmission is performed the delay requirement is no longer and the delay budget would be reduced (col. 12 ln. 52-65).

Regarding claim 7, Radha discloses “a further comparison of the delay budget with a further delay requirement is performed before a further calculation of the delay budget” as calculating the delay budget once, and then continually comparing the budget with the delay requirement for a particular packet (col. 16 ln. 2-17, Fig. 6).

Regarding claim 8, Radha discloses “the delay budget is updated if a present rate of the data transmission is lower than the limit of the data transmission capacity” as a delay budget that adapts to network conditions (col. 11 ln. 10-12) such as round-trip delay and bandwidth (col. 11 ln. 51-52).

Regarding claim 10, Radha discloses “a presentation time of the at least one selected data packet is compared to an estimated arrival time of the at least one selected data packet at the receiver in a further check and wherein the retransmission of the at least one selected data packet is performed according to the result of the further check” as a time that a data packet must be received in order to be used (col. 1 ln. 50-52), the purpose of the invention is to eliminate wasteful retransmission, the arrival time is determined from the retransmission time and if successful the packet will be recovered (col. 13 on. 35-42).

Regarding claim 11, it is directed towards a sender for performing the method of claim 1 and is therefore rejected for the same reasons as claim 1. However, Radha

does not specifically disclose that the sender has ability to "define a presentation time for a first data packet" nor "determine a delay budget" nor "determine a delay requirement". Radha discloses the receiver as having these capabilities (col. 2 ln. 58-60, Fig. 1) and furthermore teaches that the sender and receiver may be PCs (col. 5 ln. 27, col. 6 ln. 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Radha by providing the functionality taught in the receiver in the sender. It is well known in the art and yields predictable results to have a server perform functions for a client, by adding the ability to the sender to determine delay budget and delay requirement, the sender is now acting like a server and performing functions for the client.

Regarding claim 12, it is directed towards a receiver for performing the method of claim 1 and is therefore rejected for the same reasons as claim 1.

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Radha, Zhu and Balachandran in further view of Hackenberg et al. U.S. Pat. No. 6,792,470 B2.

Regarding claim 9, Radha, Zhu and Balachandran do not disclose "a priority is attributed to the at least one selected data packet and wherein the retransmission is executed according to said priority" however this is taught by Hackenberg as

determining the level of priority for a data frame and transmitting the frame with higher priority (col. 6 ln. 42-54, Fig. 6).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Radha, Zhu and Balachandran with the priority attribute of Hakenberg. The motivation for doing so is to provide quality of service. It is well known in the art that a priority attribute can be used to provide quality of service, doing so yields predictable results.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON RECEK whose telephone number is (571)270-1975. The examiner can normally be reached on Mon - Thurs 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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